A claimed feature of method claims 1-4 which clearly is not taught or suggested in the APA/Kamiyama combination is:

> at least one semiconductor layer of a second conductivity type is selectively grown in said opening at a growth temperature which is higher than a temperature where the material of said mask is decomposed, a portion of constituent elements of said material of said mask being the same as a portion of constituent elements of said semiconductor layer.

Claimed features of method claims 9-14 which are not found or suggested in the APA/Kamiyama combination are:

> ...form[ing] at least one of a current narrowing structure and a structure confining a light in a horizontal direction in parallel to a substrate [and]...forming a mask by a material including nitrogen as a constituent element, and selectively crystal-growing at least one nitride-based semiconductor layer in an opening of said mask.

Therefore, since the claim 1 limitation, "portion of constituent elements of said material of said mask being the same as a portion of constituent elements of said semiconductor layer", defined in Claim 1 is exemplified by "nitrogen", the method claims 1-4 and the method claims 9-14 have a common novel and non-obvious feature.

In brief, the common feature is that, when one semiconductor layer is selectively grown in an opening of a mask (selectively covering an underlying layer) at a growth temperature which is higher than a temperature where the material of the mask is decomposed, the mask is previously formed of a material including, as one of its constituent elements, the same constituent element as one of the constituent elements of the semiconductor layer to be grown.

Applicant does not dispute the Examiner's characterization recognition of the APA as illustrated in Applicant's "Prior Art" (Figs. 8 and 9).

However, the inventor, Mr. Kimura, was the **first** to recognize the problems of the silicon oxide film "215" in the prior art as shown in Figs 8 and 9, and as explained in detail on page 8, line 3 to page 9, line 11 of the specification.

First, these problems are **neither recognized, disclosed nor suggested** in Kamiyama '638; thus, it follows that a solution to these problems also are not (and cannot be) disclosed or suggested in Kamiyama.

I. It is disclosed, on page 8, lines 13-15 of Applicant's specification, that "the silicon oxide layer formed by the thermal chemical vapor deposition starts a partial decomposition at a temperature of not less than 800°C".

In contrast, Kamiyama '638 teaches that the GaN film 1034 is grown with a substrate temperature of 1050 °C, as will discussed in detail hereinafter. Under this condition, if the stripes of the amorphous GaN film 1035 were replaced with the stripes of SiO_2 film, there would occur those problems described in detail on page 8, line 3 to page 9, line 11 of the Applicant's specification.

However, Kamiyama '638 considers SiO_2 and SiN to be equal to each other, as seen from the following speculative statement in the passage in column 22, lines 7-10 of Kamiyama:

> In this example, the stripes of the amorphous GaN film 1035 were formed on the substrate. A similar effect can also be obtained by using oxide films and nitride films such as SiO_2 and SiN.

In other words, Kamiyama '638 does **not recognize** the problem that would have occurred if the stripes of the amorphous GaN film 1035 were replaced with the stripes of the SiO_2 film, with the result that the GaN film 1034 is grown with the substrate temperature of 1050 °C which is higher than a temperature where the SiO_2 film is decomposed.

Therefore, a person ordinarily skilled in the art, who was not aware of the problems explained on page 8, line 3 to page 9, line 11, of Applicant's specification, but who became aware of both the prior art shown in Figs. 8 and 9 and the disclosure of Kamiyama '638, would not (and could not) have combined the prior art shown in Applicant's Figs. 8 and 9 with **any other prior art, including Kamiyama '638, to overcome the problems** explained on page 8, line 3 to page 9, line 11 of Applicant's specification.

II. The Examiner refers Applicant to **claims** 1-4 of Kamiyama '638. Even though the claims of a U.S. patent, of course, form part of its disclosure, it is unusual for a patent examiner to rely on such claims for the teaching of the patent and it is **necessary to study the written description and drawings of the patent in order properly to interpret the disclosure, taken as a whole, of the patent**. The subject matter of these claims is illustrated in Figs. 35A-35D of Kamiyama '638 and described in Kamiyama's specification at column 21, lines 7-23 as follows:

> Then, GaN films are formed by a normal two-stage epitaxy by supplying TMG and NH_3 from the gas inlet 1012. More specifically, first, the substrate temperature is lowered to 600 °C. to facilitate a GaN film 1033 with a thickness of 0.05 μm to be formed three-dimensionally, i.e., hexagon-pole shaped crystals to be grown like islands as shown in FIG. 35C. Then, the substrate temperature is raised to 1050 °C. to form a GaN film 1034 with a thickness of 5.0 μm by epitaxy as shown in FIG. 35D. The flow

> rate ratio of NH_3 to TMG is 300:1. The portions of the GaN film 1034 formed on the stripes of the amorphous GaN film 1035 are amorphous because only amorphous crystal is grown on an amorphous crystal. The amorphous portions of the GaN film 1034 are specifically called amorphous GaN films 1036. The other portions of the GaN film 1034 interposed between the amorphous GaN films 1036 constitute element formation regions 1041.

As seen from the above, considering the whole of the growth of the GaN film, the GaN films are formed not only on the sapphire substrate 1031 but also on the stripes of the amorphous GaN film 1035. Namely, the amorphous GaN film 1035 does **not function as a mask**. In addition, the amorphous GaN film 1035 is **not even described as a mask** in Kamiyama '638.

As mentioned above, Kamiyama '638 states in column 22, lines 7-10, that:

> In this example, the stripes of the amorphous GaN film 1035 were formed on the substrate. A similar effect can also be obtained by using oxide films and nitride films such as SiO_2 and SiN."

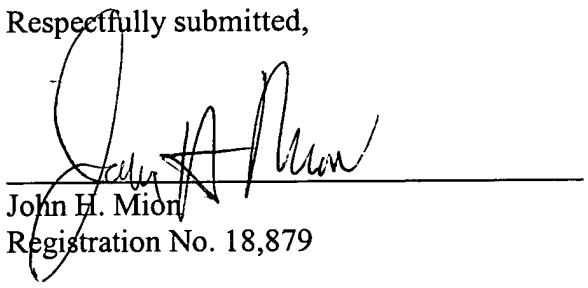
However, even if the stripes of the amorphous GaN film 1035 were replaced with the stripes of the SiN film, the GaN films would be formed not only on the sapphire substrate 1031 but also on the stripes of the SiN film. Therefore, the stripes of the SiN film would **not** and could **not** function as a **mask**.

Thus, and notwithstanding the Examiner's assertion to the contrary, if a person skilled in the art understood Kamiyama's disclosure as a **whole**, this person would not (and could not) have reached a conclusion of replacing the silicon oxide film "215" (in the prior art shown in Applicant's Figs 8 and 9) with the silicon nitride film.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this **new** prior art rejection and to find the application to be in condition for allowance with all of claims 1-4 and 9-17. (Claims 5-8 and 18-26 having been withdrawn from further consideration in this application.) However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to **call Applicant's undersigned attorney** to discuss any unresolved issues and to expedite the disposition of the application.

Filed concurrently herewith is a Petition (with a fee) for an Extension of Time of Three Months, thereby extending the time for a response to August 26, 2002. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this application, and any required fee for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



John H. Mion
Registration No. 18,879

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
(202) 663-7901
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